

Title (en)
METHODOLOGY FOR THE REMOVAL OF INORGANIC COMPONENTS FROM BIOMASS OF AGRO/FOREST/URBAN ORIGIN AND FROM LOW-QUALITY COAL SUCH AS PEAT, LIGNITE, SUB-BITUMINOUS AND BITUMINOUS COALS

Title (de)
VERFAHREN ZUR ENTFERNUNG VON ANORGANISCHEN BESTANDTEILEN AUS BIOMASSE LANDWIRTSCHAFTLICHEN/FORSTLICHEN/STÄDTISCHEN URSPRUNGS UND AUS GERINGWERTIGER KOHLE WIE ETWA TORF-, BRAUN-, FETT- UND WEICHKOHLE

Title (fr)
MÉTHODOLOGIE POUR ÉLIMINER DES COMPOSANTS INORGANIQUES ISSUS DE LA BIOMASSE D'ORIGINE AGRICOLE/FORESTIÈRE/URBAINE ET ISSUS DU CHARBON BASSE QUALITÉ TEL QUE LA TOURBE, LA LIGNITE, LES CHARBONS SOUS-BITUMINEUX ET BITUMINEUX

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Abstract (en)
[origin: WO2011029885A1] A methodology for the removal of the harmful components of ash from urban/industrial wastes and sludges from the sewage treatment plants is invented. The harmful components are alkaline metals, chlorine, sulphur, zinc, lead, and chromium. They are removed before the thermochemical conversion and therefore the corrosion problems, scaling/deposition, ash agglomeration, dioxin and furan emissions, alkaline metal, chlorine, sulphur emissions are minimized if not diminished. The emissions of heavy metals such as zinc, lead, copper, and chromium are reduced. The removal is achieved with prepyrolysis/pregasification at 250-320 °C for 5 min to 2 h of urban/industrial wastes and sludges from the sewage treatment plants. Then the prepyrolysed/pregasified sample is washed with a 0.5%-5% weight basis aqueous calcium acetate and/or magnesium acetate and/or aluminum acetate solution. These acetate salts can be mixed in a proportion of 0% to 100% to form an active salt which is used for the preparation of the aqueous solution. Otherwise, they can be used separately to prepare separate solutions for successive extractions with the same results. The proportions used and the use or not of successive extractions depend on the kind and on the composition of the initial material as well as on the desired properties of the material after treatment. Any kind tap water from a public water supply system, spring, etc. can be used for the preparation of aqueous solution. The solid-to-liquid ratio is 33g/L to 600 g/L, the temperature varies from 13°C to 95°C, and treatment time is between 5 min to 2.

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